

PERFORMANCE VERIFICATION SAMPLING PROGRAM

May 2014 Event

Groundwater Migration
Control System
Sauget Area 2

Prepared for

Solutia Inc.
c/o Bill Johnson
575 Maryville Centre Drive
St. Louis, Missouri 63141

October 2014



URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # **21562759**



October 7, 2014

Mr. Bill Johnson
Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

**Re: Data Validation Report
Groundwater Migration Control System
Surface Water Sampling Event – May 2014
Sauget, Illinois
URS Project No. 21562759**

Dear Bill:

URS Corporation (URS) is pleased to present this Data Validation Report for surface water sampling, conducted as part of the Groundwater Migration Control System Performance Verification Sampling Program. This report provides:

- Brief summary of field activities
- Figure showing the sampling locations
- Validated sample summary list
- Analytical detection table
- Data validation worksheets
- Analytical results table

SCOPE OF WORK

Surface water sampling field activities were conducted on May 28, 2014, in accordance with applicable portions of the Surface Water and Sediment Performance Verification Sampling Plan dated January 31, 2003. During the sampling event, surface water samples were collected from a total of five locations immediately adjacent to Site R, at stations PDA-2, -3, -4, -5 and -9 as defined in the Menzie Curra sampling effort in 2000. Sediment samples were not collected, per the March 12, 2013 email correspondence from Solutia.

Surface Water Sampling

Surface water samples were collected at the sediment-water interface (within 1 foot of the bottom) at each sampling location. Because of the sample volumes required and sampling limitations due to swift currents, a peristaltic pump system was utilized, which included use of new sample tubing at each sample location.



Mr. Bill Johnson
Solutia Inc.
October 7, 2014
Page 2

Surface water samples, including an analytical duplicate and a matrix spike/matrix spike duplicate (MS/MSD) sample, were submitted to the laboratory and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, herbicides and metals. One trip blank was submitted and analyzed for VOCs.

Samples for VOC, SVOC, and total metals analysis were collected in laboratory supplied preserved sample containers and samples for pesticides and herbicides analysis were collected in unpreserved sample containers. Samples for dissolved metals analysis were field filtered and preserved. Field measurements were also recorded for temperature, pH, dissolved oxygen, conductivity, and turbidity.

Surface water samples were appropriately labeled with the sample location, requested analysis, preservative, date and time sampled and sampler's initials. Samples were chilled with ice and shipped under chain of custody (COC) to TestAmerica Laboratories Inc. in Savannah, Georgia.

Should you have any questions or comments regarding this Data Validation Report, please do not hesitate to contact me at 314.429.0100

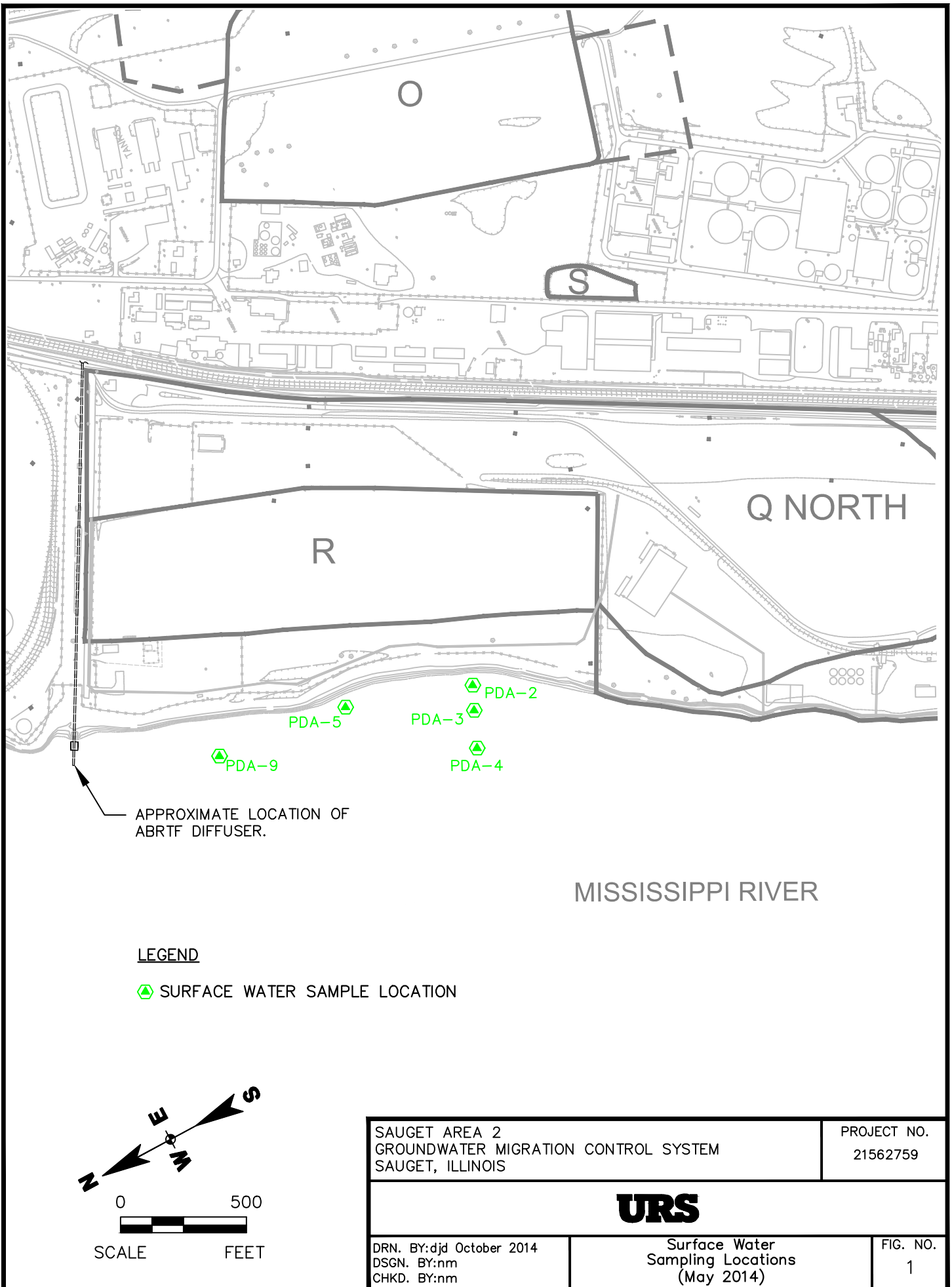
Respectfully,

A handwritten signature in blue ink, appearing to read "Robert Billman", is positioned above the printed name.

Robert Billman
Senior Project Manager

Enclosures

Figure





Validated Sample Summary List

Sauget Area 2
Groundwater Migration Control System
Validated Sample Summary List - SDG SAS071
May 2014

SDG	Sample ID	Sample Date	VOCs	SVOCs	Pesticides	Herbicides	Metals
SAS071	SW-SA2-GMCS-3	5/28/2014	X	X	X	X	X
SAS071	SW-SA2-GMCS-5	5/28/2014	X	X	X	X	X



Analytical Detections Table

See last page of table for notes

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Detections
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
PDA-2								
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Sulfur dioxide	2200	ug/L	T J N	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Sulfur	7.3	ug/L	T J N	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Aluminum	2.1	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Barium	0.07	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Barium (Dissolved)	0.05	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Calcium	43	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Calcium (Dissolved)	43	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Chromium	0.0032	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Iron	2.6	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Iron (Dissolved)	0.027	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Magnesium (Dissolved)	16	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Manganese	0.17	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Nickel	0.0052	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Potassium (Dissolved)	2.8	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Sodium	19	mg/L		J
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		J
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Vanadium	0.0064	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Zinc	0.013	mg/L	J	
PDA-3								
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Sulfur dioxide	3800	ug/L	T J N	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Sulfur	6.8	ug/L	T J N	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Aluminum	2.2	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Barium	0.074	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Barium (Dissolved)	0.05	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Calcium	45	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Calcium (Dissolved)	43	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Chromium	0.0032	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Cobalt	0.0011	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Iron	2.7	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Magnesium	17	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Magnesium (Dissolved)	16	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Manganese	0.18	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Nickel	0.0053	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Potassium	3.4	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Potassium (Dissolved)	2.9	mg/L		

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Detections
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Selenium	0.0076	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Selenium (Dissolved)	0.0067	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Sodium	20	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Vanadium	0.0066	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Zinc	0.013	mg/L	J	
PDA-4								
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Sulfur dioxide	3100	ug/L	T J N	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2-Fluoro-4-nitrophenol	4.8	ug/L	T J N	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Aluminum	2.4	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Barium	0.073	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Barium (Dissolved)	0.051	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Calcium	43	mg/L		J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Calcium (Dissolved)	44	mg/L		J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Chromium	0.0034	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Cobalt	0.0013	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Iron	3	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Iron (Dissolved)	0.028	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Magnesium (Dissolved)	16	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Manganese	0.18	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Nickel	0.0058	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Potassium (Dissolved)	3	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Selenium (Dissolved)	0.007	mg/L	J	J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Sodium	19	mg/L		J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Vanadium	0.0068	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Zinc	0.013	mg/L	J	
PDA-5								
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Sulfur dioxide	720	ug/L	T J N	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Phenylmercaptan	NC	ug/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	p-Quinone	NC	ug/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Sulfur	4.9	ug/L	T J N	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Aluminum	2.3	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Barium	0.072	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Barium (Dissolved)	0.048	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Calcium	43	mg/L		J

See last page of table for notes

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Detections
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Calcium (Dissolved)	41	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Chromium	0.0033	mg/L	J	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Iron	2.7	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Magnesium (Dissolved)	15	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Manganese	0.17	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Nickel	0.0053	mg/L	J	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Potassium (Dissolved)	2.7	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Selenium (Dissolved)	0.0065	mg/L	J	J
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Sodium	20	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Vanadium	0.0066	mg/L	J	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Zinc	0.012	mg/L	J	
PDA-9								
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Sulfur dioxide	3200	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	3-Hexanol, 4-methyl-	5.8	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Phenol, 2-fluoro-4-nitro-, acetate(ester)	4.1	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Sulfur	13	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Aluminum	2.3	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Barium	0.072	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Barium (Dissolved)	0.05	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Calcium	43	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Calcium (Dissolved)	43	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Chromium	0.0035	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Cobalt	0.0012	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Iron	2.8	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Magnesium (Dissolved)	16	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Manganese	0.17	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Nickel	0.007	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Potassium (Dissolved)	2.9	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Selenium (Dissolved)	0.008	mg/L	J	J
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Sodium	19	mg/L		J
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Sodium (Dissolved)	21	mg/L		J
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Vanadium	0.0065	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Zinc	0.013	mg/L	J	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Detections
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2-Fluoro-4-nitrophenol	4.1	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Aldol condensation product	7.3	ug/L	T A J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Phosgene oxime	5.3	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Sulfur	26	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Aluminum	2.3	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Barium	0.07	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Barium (Dissolved)	0.047	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Calcium	42	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Calcium (Dissolved)	41	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Chromium	0.0033	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Cobalt	0.0016	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Iron	2.8	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Iron (Dissolved)	0.027	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Magnesium (Dissolved)	15	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Manganese	0.17	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Nickel	0.0059	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Potassium (Dissolved)	2.7	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Selenium (Dissolved)	0.0064	mg/L	J	J
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Sodium	20	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Vanadium	0.0068	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Zinc	0.014	mg/L	J	

Notes:

NC - Not Calculated

Lab Qualifier Definition

- J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
- N Flag indicates the presumptive evidence of a compound
- T Result is a tentatively identified compound (TIC) and an estimated value

URS Qualifier Definition

- J Analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.



Data Validation Worksheets

1.0 FULL VALIDATION OF VOC DATA - SDG SAS071

This section describes the full validation for two surface water samples which were prepared by USEPA SW-846 Method 5030B and analyzed for volatile organic compounds (VOCs) by USEPA SW-846 Method 8260B. Samples were analyzed by TestAmerica Laboratories, Inc. of Savannah, Georgia, and submitted as part of sample delivery group (SDG) SAS071. Samples included as part of this validation are listed below:

Sample Identification
SW-SA2-GMCS-5
SW-SA2-GMCS-3

QA/QC criteria were identified in the Groundwater Migration Control System, Sauget Area 2 Superfund Site, Field Sampling Plan, Vol. 3A, Jan. 31, 2003 and USEPA SW-846 Method 8260B. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2013) where applicable to SW-846 Method 8260B.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards and retention times
- Laboratory control spike (LCS) samples
- Target compound identification and quantitation
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated that chloroform was detected in VOC method and trip blanks. VOC MS/MSD recovery for chloroethane was outside evaluation criteria. VOC continuing calibration verification (CCV) recoveries for ethanol, isobutyl alcohol, and 1,4-dioxane were recovered above the upper control limit. Associated samples were non-detect and,

therefore, no qualification based on CCV recoveries was required. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated one of seven coolers was received by the laboratory at a temperature of 0.8°C which is outside the 4°C ± 2°C criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the chains-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The validated samples were received at approximately 4°C ± 2°C, preserved with sodium bisulfate and hydrochloric acid and were analyzed within the 14 day holding time criteria. No qualification of data was required due to sample preservation or holding time criteria.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against criteria established in USEPA SW-846 Method 8260B.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, and no qualification of data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatile analysis. Samples as part of SDG SAS071 were analyzed using instrument CMSS. The ICAL for instrument CMSS was established on 6/4/2014 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8260B. An average response factor (RF) was determined for each target analyte, the RFs were reviewed and verified greater than 0.10 for chloromethane, 1,1-dichloroethane and bromoform, 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane and greater than 0.05 for all other target analytes.

An initial calibration verification (ICV) was analyzed following the initial calibration. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs were less than 20% for target compounds with the exception of bromomethane (30.9%) and chloroethane (25.1%). Bromomethane and chloroethane were reported as non-detect and associated with a positive bias; therefore, no qualification of data was required.

Review of the initial calibration summary forms indicated %RSDs were ≤30% for calibration check compounds (CCCs) [1,1-dichloroethene, toluene, chloroform, ethylbenzene, 1,2-dichloropropane, and vinyl chloride], and ≤15% for non-CCCs with some exceptions. The initial calibration for compounds with a %RSD value outside evaluation criteria was determined using least square linear regression: correlation coefficients (r) were greater than 0.990. Recalculation of the %RSDs and RFs for a compound associated with each internal standard was performed from the raw data and no errors in calculations were noted; therefore, no qualification of data was required.

1.6 Calibration verification

Review of sample chromatograms indicated the continuing calibration verifications (CCVs) were performed at the required frequency. Review of continuing calibration summary form indicated that RFs met the evaluation criteria of greater than 0.10 (chloromethane, 1,1-dichloroethane and bromoform), 0.30 (chlorobenzene and 1,1,2,2-tetrachloroethane) and greater than 0.05 for all other analytes. In addition, percent difference/drift (%Ds) met the evaluation criteria of $\leq 30\%$ for all calibration check compounds (CCCs) and $\leq 20\%$ for all other target analytes with the exceptions summarized in the table below.

CCV ID	Parameter	Analyte	CCV %D
CCV 680-333053/2	VOCs	Ethanol	189.8
CCV 680-333053/2	VOCs	Isobutanol	75.6
CCV 680-333053/2	VOCs	1,4-Dioxane	120.6
CCV 680-333284/2	VOCs	Ethanol	108.2

Analytical data reported as non-detect and associated with CCV recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. Analytes with percent difference/drift above evaluation criteria in associated samples were non-detect; therefore, no qualification of data was required.

Recalculations of the RFs and %Ds for two target compounds were completed for each CV, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of the blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory or field activities. Blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8260B.

Blank ID	Parameter	Analyte	Concentration/ Amount
SW-SA2-GMCS-TB	VOCs	Chloroform	0.61 $\mu\text{g/L}$
MB 680-333284/8	VOCs	Chloroform	0.498 $\mu\text{g/L}$
MB 680-333292/8	VOCs	Chloroform	0.300 $\mu\text{g/L}$

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
SW-SA2-GMCS-5	VOCs	Chloroform	-	U

The review of chromatograms indicates all peaks present were accounted or the concentrations reported were below the method detection limit. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. VOC surrogates were within evaluation criteria.

Approximately 10% of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted and no qualification of data was required.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Sample SW-SA2-GMCS-5 was spiked and analyzed for VOCs. MS/MSD recoveries were within evaluation criteria with the exception of chloroethane as summarized in the following table. Chloroethane MS/MSD recoveries exceeded the calibration range of the analytical instrument.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD RPD Criteria
680-101782-3 MS/MSD	VOCs	Chloroethane	4317/4423	2	47-148/40

USEPA National Functional Guidelines for Superfund Organic Methods Data indicates that organic data does not require qualification based on MS/MSD data alone and LCS/LCSD recoveries were within evaluation criteria; therefore, no qualification of data was required.

Approximately 10% of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.10 Internal Standards and Retention Times

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50% to +100%, and the IS retention times must be within 30 seconds of the IS continuing calibration retention time. IS areas and retention times for the validated samples in this SDG were within evaluation criteria. The summary forms versus the raw data were verified and no transcription errors were noted.

1.11 Laboratory Control Spike (LCS) Samples

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS/LCSD recoveries were within acceptance criteria. No qualification of data was required.

Approximately 10% of the spiking compound recoveries for the LCS's were recalculated using the LCS/LCSD summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantitation

For the validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified properly and verified against the retention time of the associated standard curve or CV. Approximately 10% of the target and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the validated samples.

For the validation of compound quantitation, approximately 10% of target and spiking compounds were recalculated from the raw data. No calculation errors were noted; therefore, no qualification of the data was required.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS/LCSD and surrogate data were achieved for this SDG.

1.0 FULL VALIDATION OF SVOC DATA – SDG SAS071

This section describes the full validation for two surface water samples which were prepared by USEPA SW-846 Methods 3520C and analyzed for semi-volatile organic compounds (SVOCs) by USEPA SW-846 Method 8270D. Samples were analyzed by TestAmerica Laboratories, Inc. of Savannah, Georgia, and submitted as part of sample delivery group (SDG) SAS071. Samples included as part of this validation are listed below:

Sample Identification
SW-SA2-GMCS-5
SW-SA2-GMCS-3

QA/QC criteria were identified in the Groundwater Migration Control System, Sauget Area 2 Superfund Site, Field Sampling Plan, Vol. 3A, Jan. 31, 2003 and USEPA SW-846 Method 8270D. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2013) where applicable to SW-846 Method 8270D.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- Instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standard areas and retention times
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated bis(2-ethylhexyl) phthalate was detected in the SVOC method blank. SVOC LCS/LCSD recoveries were outside evaluation criteria for 4-chloroaniline, 3,3'-dichlorobenzidine, 3- and 4- nitroaniline. Several SVOC MS/MSD recoveries were outside evaluation criteria in sample SW-SA2-GMCS-5. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated one of seven coolers was received by the laboratory at a temperature of 0.8°C which is outside the 4°C ± 2°C criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The samples were received and maintained at approximately 4°C ± 2°C. All samples were extracted within 7 days of collection and analyzed within 40 days of sample extraction. No qualification of data was required due to sample preservation or holding time criteria.

1.4 Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against the laboratory tuning criteria established in Method 8270D.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, therefore; no qualification of the data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An Initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatile analysis. Samples as part of SDG SAS071 were analyzed using instrument CMSE. The ICAL for instrument CMSE was established on 6/6/2014, prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8270D. An average response factor (RF) was determined for each target analyte, and the RFs were reviewed and verified as greater than the minimum RFs referenced in Table 4 National Functional Guidelines, and if not referenced greater than 0.05 for all target analytes.

Review of the initial calibration summary forms indicated compounds had percent relative standard deviations (%RSDs) ≤ 20%. Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

An initial calibration verification (ICV) was analyzed following the initial calibration. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs were less than 30% for target compounds.

1.6 Calibration Verification

Review of sample chromatograms indicated the calibration verifications (CVs) were performed at the required frequency of every 12 hours. Review of continuing calibration summary forms indicated RFs met the evaluation criteria of greater than 0.05 for all target analytes. In addition, percent differences (%Ds) met the evaluation criteria of less than or equal to 30% for compounds that were quantitated using linear calibration (response factor).

Recalculations of the RFs and %Ds for one compound per internal standard were performed, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. USEPA SW-846 Method 8270D requires that method blanks are run with every analytical batch.

Blank ID	Parameter	Analyte	Concentration/Amount
MB 680-331759/10-A	SVOCs	Bis(2-ethylhexyl) phthalate	2.83 µg/L

Analytical data reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Surrogate recoveries were within evaluation criteria.

Approximately 10% of the surrogate recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Sample SW-SA2-GMCS-5 was spiked and analyzed for SVOCs. MS/MSD recoveries were within evaluation criteria with the exceptions summarized in the table below.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD RPD Criteria
680-101782-3 MS/MSD	SVOCs	Anthracene	54/46	17	47-101/50
680-101782-3 MS/MSD	SVOCs	Bis(2-ethylhexyl) phthalate	53/41	25	48-119/50
680-101782-3 MS/MSD	SVOCs	Butyl benzyl phthalate	56/49	14	53-117/50
680-101782-3 MS/MSD	SVOCs	3,3'-Dichlorobenzidine	0/0	nc	10-130/50
680-101782-3 MS/MSD	SVOCs	2,4-Dimethylphenol	0/0	nc	34-96/50
680-101782-3 MS/MSD	SVOCs	Di-n-octyl phthalate	52/43	20	45-122/50
680-101782-3 MS/MSD	SVOCs	2-Methylphenol	12/28	80	46-102/50
680-101782-3 MS/MSD	SVOCs	3 & 4 Methylphenol	28/41	36	47-104/50
680-101782-3 MS/MSD	SVOCs	2-Nitroaniline	6/3	59	49-116/50
680-101782-3 MS/MSD	SVOCs	3-Nitroaniline	0/0	nc	25-109/50
680-101782-3 MS/MSD	SVOCs	4-Nitroaniline	0/0	nc	44-119/50
680-101782-3 MS/MSD	SVOCs	Nitrobenzene	120/121	1	41-105/50

USEPA National Functional Guidelines for Superfund Organic Methods Data indicates that organic data does not require qualification based on MS/MSD data alone. LCS/LCSD recoveries were within evaluation criteria with the exception of analytes listed and qualified as appropriate in Section 1.11 of this data validation; therefore, no qualification of data was required.

Approximately 10% of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.10 Internal Standard Areas and Retention Times

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. Following Method 8270D, the IS areas for the samples and CVs must be within -50% to +100% and retention times must be within 30 seconds of the IS area and retention time of the midpoint of the ICAL.

The IS areas for the CVs and the validated samples in this SDG were within evaluation criteria. No qualifications to the data based on IS areas or retention times were required.

1.11 Laboratory Control Sample (LCS)

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS/LCSD recoveries were within evaluation criteria with the exceptions summarized below.

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/RPD Criteria
LCS/LCSD 680-331759/11-A/12-A	SVOCs	4-Chloroaniline	7/36	135	10-130/50
LCS/LCSD 680-331759/11-A/12-A	SVOCs	3,3'-Dichlorobenzidine	0/52	200	10-130/50
LCS/LCSD 680-331759/11-A/12-A	SVOCs	3-Nitroaniline	7/60	157	25-109/50
LCS/LCSD 680-331759/11-A/12-A	SVOCs	4-Nitroaniline	26/65	86	44-119/50

Analytical data that required qualification based on LCS/LCSD data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
SW-SA2-GMCS-9	SVOCs	4-Chloroaniline	UJ
SW-SA2-GMCS-9	SVOCs	3,3'-Dichlorobenzidine	UJ
SW-SA2-GMCS-9	SVOCs	3-Nitroaniline	UJ
SW-SA2-GMCS-9	SVOCs	4-Nitroaniline	UJ
SW-SA2-GMCS-9-Dup	SVOCs	4-Chloroaniline	UJ
SW-SA2-GMCS-9-Dup	SVOCs	3,3'-Dichlorobenzidine	UJ
SW-SA2-GMCS-9-Dup	SVOCs	3-Nitroaniline	UJ
SW-SA2-GMCS-9-Dup	SVOCs	4-Nitroaniline	UJ
SW-SA2-GMCS-5	SVOCs	4-Chloroaniline	UJ
SW-SA2-GMCS-5	SVOCs	3,3'-Dichlorobenzidine	UJ
SW-SA2-GMCS-5	SVOCs	3-Nitroaniline	UJ
SW-SA2-GMCS-5	SVOCs	4-Nitroaniline	UJ

Sample ID	Parameter	Analyte	Qualification
SW-SA2-GMCS-4	SVOCs	4-Chloroaniline	UJ
SW-SA2-GMCS-4	SVOCs	3,3'-Dichlorobenzidine	UJ
SW-SA2-GMCS-4	SVOCs	3-Nitroaniline	UJ
SW-SA2-GMCS-4	SVOCs	4-Nitroaniline	UJ
SW-SA2-GMCS-3	SVOCs	4-Chloroaniline	UJ
SW-SA2-GMCS-3	SVOCs	3,3'-Dichlorobenzidine	UJ
SW-SA2-GMCS-3	SVOCs	3-Nitroaniline	UJ
SW-SA2-GMCS-3	SVOCs	4-Nitroaniline	UJ
SW-SA2-GMCS-2	SVOCs	4-Chloroaniline	UJ
SW-SA2-GMCS-2	SVOCs	3,3'-Dichlorobenzidine	UJ
SW-SA2-GMCS-2	SVOCs	3-Nitroaniline	UJ
SW-SA2-GMCS-2	SVOCs	4-Nitroaniline	UJ

Approximately 10% of the spiking compound recoveries for the LCS/LCSD were recalculated from the raw data and verified using the LCS/LCSD summary forms, and no calculation or transcription errors were noted. No qualification of data was required.

1.12 Target Compound Identification and Quantitation

For the validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified properly and verified against the retention time of the associated standard curve or CV. All target analytes in the validated samples were non-detect; therefore, the retention times of the surrogates were verified and matched retention times of associated standards. Approximately 10% of the spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the validated samples.

For the validation of compound quantitation, target analytes were non-detect; therefore, selected spiking compounds were recalculated from the raw data, and no calculation errors were noted. No qualification of the data was required.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS/LCSD and surrogate data were achieved for this SDG.

1.0 FULL VALIDATION OF PESTICIDES DATA – SDG SAS071

This section describes the full validation for two surface water samples which were prepared by USEPA SW-846 Method 3520C and analyzed for organochlorine pesticides by USEPA SW-846 Method 8081B. Samples were analyzed by TestAmerica Laboratories, Inc. of Savannah, Georgia, and submitted as part of sample delivery group (SDG) SAS071. Samples included as part of this validation are listed below:

Sample Identification
SW-SA2-GMCS-5
SW-SA2-GMCS-3

QA/QC criteria were identified in the Groundwater Migration Control System, Sauget Area 2 Superfund Site, Field Sampling Plan, Vol. 3A, Jan. 31, 2003 and USEPA SW-846 Method 8081B. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2013) where applicable to SW-846 Method 8081B.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- Instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards
- Laboratory control samples (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

No issues were noted in the laboratory case narrative.

The cooler receipt form indicated one of seven coolers was received by the laboratory at a temperature of 0.8°C which is outside the 4°C ± 2°C criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the chains-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The cooler receipt form indicated the cooler temperatures were received at approximately $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The samples were extracted and analyzed within holding time criteria of 14 days until extraction and 40 days from extraction to analysis. No qualification of data was required due to sample preservation or holding time criteria.

1.4 Instrument Performance

GC-ECD instrument performance checks were performed to ensure proper compound identification and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, passed endrin and 4,4'-DDT breakdown test, and samples analyzed within twelve hours of performance check sample. Instrument performance check samples were evaluated against criteria established in USEPA SW-846 Method 8081B. Endrin and 4,4'-DDT breakdown test results were recalculated from the raw data and no calculation or transcription errors were noted. No qualification of data was required.

1.5 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for pesticide analysis. Samples as part of SDG SAS071 were analyzed using instrument CSGJ. The ICAL for instrument CSGJ was established on 6/4/14. An initial calibration was analyzed at the beginning of the run sequence. At least six concentration standards were used to establish the initial calibration curve as required by Method 8081B. For the initial calibration, the relative response factors (RRFs) were reviewed and %RSDs were $< 20\%$ for all analytes and the correlation coefficient for pesticides determined by second order quadratic regression was greater than 0.99 on each analytical column. An initial calibration verification (ICV) was analyzed following the initial calibration. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs were reviewed. Recalculations of the RRFs and %RSD for three compounds per standard were performed, and no transcription or calculation errors were noted. No qualification of data was required.

1.6 Calibration Verification

Review of the sample chromatograms indicate the calibration verifications (CVs) were performed within 12 hours of operation. Review of continuing calibration raw data and summary forms for the primary column indicated compounds met the percent differences (%Ds) or (%drift) evaluation criteria of $\leq 20\%$ with the exception of 4,4'-DDD (20.3%), 4,4'-DDT (23.1%), methoxychlor (22.8%), and endrin ketone (21.1%) analyzed on the primary column. Analytes were reported as non-detect and associated with a positive bias; therefore, no qualification of data was required. Data for the validated samples were reported from the primary column with the exception of 4,4'-DDD; no qualification of data was required because %RPD between the primary and secondary columns were $< 40\%$.

Additionally, selected pesticide calibration RRF and %Ds or %drift were recalculated from the raw data, for both columns, and no transcription or calculation errors were noted. No qualification of data was required.

1.7 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8081B. All blank samples were non-detect. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Surrogate recoveries were within evaluation criteria for the validated samples; therefore, no qualification of data was required.

Percent recoveries were reviewed, and the summary forms versus the raw data were verified. No errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess accuracy and precision for the analysis; and assess potential matrix affects. Sample SW-SA2-GMCS-5 was spiked and analyzed for pesticides. MS/MSD recoveries were within evaluation criteria; therefore, no qualification of data was required.

Approximately 10% of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.10 Internal Standards

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within $\pm 50\%$ of the ICAL standard. IS areas for the validated samples were within evaluation criteria.

IS retention times were within evaluation criteria for the validated samples. The raw data were verified, and no transcription errors were noted.

1.11 Laboratory Control Samples (LCS)

Laboratory control samples were analyzed with each batch to assess the accuracy of the analytical process. All LCS/LCSD recoveries were within evaluation criteria; no qualification of data was required.

Approximately 10% of the spiking compound recoveries for the LCS were recalculated using the LCS/LCSD summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantitation

For the validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified properly and verified against the retention time of the associated standard curve or CV. All target analytes in the validated samples were non-detect; therefore, the retention times of the surrogates were verified and matched retention times of associated standards. Approximately 10% of the spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the validated samples.

For the validation of compound quantitation, target analytes were non-detect; therefore, selected spiking compounds were recalculated from the raw data, and no calculation errors were noted. No qualification of the data was required.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS/LCSD and surrogate data were achieved for this SDG.

1.0 FULL VALIDATION OF HERBICIDES DATA - SDG SAS071

This section describes the full validation for two surface water samples which were prepared and analyzed for chlorinated herbicides by USEPA SW-846 Method 8151A. Samples were analyzed by TestAmerica Laboratories, Inc. of Savanna, Georgia, and submitted as part of sample delivery group (SDG) SAS071. Samples included as part of this validation are listed below:

Sample Identification
SW-SA2-GMCS-5
SW-SA2-GMCS-3

QA/QC criteria are identified in the Groundwater Migration Control System, Sauget Area 2 Superfund Site, Field Sampling Plan, Vol. 3A, Jan. 31, 2003 and USEPA SW-846 Method 8151A. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), where applicable to USEPA SW-846 Method 8151A.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Sample preservation and holding times
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Laboratory control samples (LCS)
- Target compound identification and quantification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete for the SDG.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated MS/MSD recoveries for mecoprop were outside evaluation criteria in sample SW-SA2-GMCS-5.

The cooler receipt form indicated one of seven coolers was received by the laboratory at a temperature of 0.8°C which is outside the 4°C ± 2°C criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The samples were received and maintained at approximately 4°C ±

2°C. All samples were extracted within 14 days of collection and analyzed within 40 days of sample extraction. No qualification of data was required due to sample preservation or holding time criteria.

1.4 Initial Calibration

Initial calibration (ICAL) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for herbicide analysis. Samples as part of SDG SAS071 were analyzed using instrument CSGS. The ICAL for instrument CSGS were established on 6/4/14 prior to sample analysis and using at least seven concentration standards on two GC columns to establish the initial calibration curve as required by Method 8151A. An initial calibration verification (ICV) was analyzed following the initial calibration. Percent difference (%D) values from comparing ICV RF to the average ICAL RFs were reviewed. Also, the %RSDs for herbicides determined by linear least squares regression was less than 15%, and the correlation coefficient for herbicides determined by second order quadratic regression was greater than 0.99 on each analytical column with the exceptions summarized in the following table.

ICV (Date/Time/Column)	Analyte	%D
6/4/2014 19:53 Primary column	Dalapon	-22.5
6/4/2014 19:53 Primary column	Mecoprop	-38.9
6/4/2014 19:53 Secondary column	Mecoprop	-18.2
6/4/2014 19:53 Secondary column	DCAA	18.4

Analytical data that required qualification based on ICV data are included in the table below. Analytical data reported as non-detect and associated with ICV recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Analyte	Qualification
SW-SA2-GMCS-5	Dalapon	UJ
SW-SA2-GMCS-5	Mecoprop	UJ
SW-SA2-GMCS-3	Dalapon	UJ
SW-SA2-GMCS-3	Mecoprop	UJ

Additionally, approximately 10% of the calibration curves were recalculated and no transcription or calculation errors were noted.

1.5 Calibration Verification

To confirm the ICAL, and to evaluate instrument performance over specific time periods during sample analysis, calibration verifications (CV) were performed. Daily CVs were performed within the required frequency of every 20 samples or 12-hour analytical shift for herbicide analysis. For the CVs bracketing the validated samples, the percent drift for each herbicide compound was within evaluation criteria (15%) with exceptions summarized in the following table.

CCV (Date/Time/Column)	Analyte	%D
6/5/2014 6:10 Primary column	Dalapon	28.4

Analytical data reported as non-detect and associated with CV recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

Additionally, approximately 10% of the herbicide calibration percent differences (%Ds) or percent drifts (%drift) were recalculated from the raw data, for both columns, and no transcription or calculation errors were noted.

1.6 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by Method 8151A. All target compounds in the method blanks were reported as non-detect. Review of chromatograms indicated that other than surrogates, no peaks were positively identified above the method detection limit on either analytical column for herbicides. No data qualifications were required based on blank samples.

1.7 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. Surrogate recoveries were within evaluation criteria for the validated samples; therefore, no qualification of data was required.

Selected surrogate recoveries were recalculated for the validated samples, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Sample SW-SA2-GMCS-5 was spiked and analyzed for herbicides. MS/MSD recoveries were within evaluation criteria with the exceptions of those summarized in the following table.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD RPD Criteria
SW-SA2-GMCS-5	Herbicides	Mecoprop	41/65	46	55-134/50

USEPA National Functional Guidelines for Superfund Organic Methods Data indicates that organic data does not require qualification based on MS/MSD data alone and LCS recoveries were within evaluation criteria for mecoprop; therefore, no qualification of herbicide data was required.

A minimum of 10% of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.9 Laboratory Control Samples (LCS)

A laboratory control sample (LCS) was analyzed with the analytical batch as required by USEPA SW-846 Method 8151A. All LCS recoveries were within evaluation criteria; therefore, no qualification of data was required.

Approximately 10% of the LCS recoveries were recalculated, and no calculation or transcription errors were noted.

1.10 Target Compound Identification and Quantification

For the validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified properly and verified against the retention time of the associated standard curve or CV. All target analytes in the validated samples were non-detect; therefore, the retention times of the surrogates were verified and matched retention times of associated standards. Approximately 10% of the spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the validated samples.

For the validation of compound quantitation, target analytes were non-detect; therefore, selected spiking compounds were recalculated from the raw data, and no calculation errors were noted. No qualification of the data was required.

1.11 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS/LCSD and surrogate data were achieved for this SDG.

1.0 FULL VALIDATION OF METALS DATA – SDG SAS071

This section describes the full data validation for two surface water samples which were prepared by USEPA SW-846 Methods 3005A and 7470A, and analyzed for total and dissolved metals by USEPA SW-846 Method 6010C and total and dissolved mercury by USEPA SW-846 7470A, respectively. Samples were analyzed by TestAmerica Laboratories, Inc. of Savannah, Georgia, and submitted as part of sample delivery group (SDG) SAS071. Samples included as part of this validation are listed below:

Sample Identification
SW-SA2-GMCS-5
SW-SA2-GMCS-3

QA/QC criteria were identified in the Groundwater Migration Control System, Sauget Area 2 Superfund Site, Field Sampling Plan, Vol. 3A, Jan. 31, 2003 and USEPA SW-846 Methods 6010C and 7470A. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Superfund Inorganic Data Review (USEPA 2013) where applicable to SW-846 Methods 6010C and 7470A.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative /cooler receipt form
- Sample preservation and holding times
- Blank contamination
- Initial calibration
- Calibration verification
- Laboratory control spike (LCS)
- Matrix spike/matrix spike duplicate (MS/MSD)
- Laboratory duplicate sample
- ICP serial dilution
- ICP interference check samples (ICS)
- Sample result verification
- Overall assessment of data

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete for this SDG.

1.2 Laboratory Case Narrative / Cooler Receipt Form

The laboratory case narrative indicated several inorganic MS/MSD recoveries were outside evaluation criteria in sample SW-SA2-GMCS-5, including post digestion spike recoveries for calcium. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated one of seven coolers was received by the laboratory at a temperature of 0.8°C which is outside the 4°C ± 2°C criteria. Samples were received in good condition; therefore, no qualification of data was required.

1.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the sample preparation logs, the analysis run logs, and raw data forms for holding time compliance. The samples were received by the laboratory at approximately 4°C ± 2 °C, and analyzed within the evaluation criteria of 6 months for metals and within 28 days for mercury. No qualification of data was required based on holding time criteria or sample preservation.

1.4 Blank Contamination

The purpose of blank samples was to evaluate the existence and magnitude of contamination problems emanating from laboratory or field activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 6010C and 7470A. All blank samples were non-detect. No qualification of data was required.

1.5 Initial Calibration

Initial calibration (ICAL) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for metals analyses. An ICAL was analyzed at the beginning of the run sequence. ICAL curves were established using a blank and three standards for analysis of metals by inductively coupled plasma atomic emission (ICP-AE). ICAL curves were established using a blank and six standards for the analysis of mercury by cold vapor atomic absorption (CVAA). All initial calibration verification (ICV) recoveries were within evaluation criteria (ICP total and dissolved metals, 90-110%; total and dissolved mercury, 80-120%). Approximately 10% of the ICAL curve and ICV recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted. No qualification of the data was required based on ICV data.

1.6 Calibration Verification

Calibration verification (CV) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data established by the ICAL. The laboratory analyzed CV samples at a frequency of 10% as specified by the methodologies. CV samples associated with the validated samples had recoveries within the evaluation criteria (ICP total and dissolved metals, 90-110%; total and dissolved mercury, 80-120%). Approximately 10% of the CV sample recoveries were recalculated and compared to the raw data and no calculation or transcription errors were noted.

1.7 Laboratory Control Spike (LCS)

Laboratory control spike (LCS) samples were analyzed to assess the accuracy of the analytical method and to demonstrate laboratory performance. The LCS recoveries for metals and mercury were within evaluation criteria (75-125%) for metals and (80-120%) for mercury. Approximately 10% of the LCS recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted. No qualification of data was required based on LCS recoveries.

1.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD samples are analyzed to assess potential matrix effects. Sample SW-SA2-GMCS-5 was spiked and analyzed for total and dissolved ICP metals and total and dissolved mercury. MS/MSD recoveries were within evaluation criteria with the exceptions summarized in the table below:

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD RPD Criteria
680-101782-3 MS/MSD	Total ICP Metals	Calcium	84/61	2	75-125/20
680-101782-3 MS/MSD	Dissolved ICP Metals	Calcium	61/70	1	75-125/20
680-101782-3 MS/MSD	Dissolved ICP Metals	Calcium	70/58	1	75-125/20

The MS/MSD recoveries for inorganic analytes with sample concentrations greater than (4X) the matrix spike concentration did not require evaluation or qualification. MS/MSD recoveries for total and dissolved calcium in sample SW-SA2-GMCS-5 could not be evaluated because the sample concentrations were greater than four times (4X) the matrix spike concentration.

Approximately 10% of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.9 Laboratory Duplicate Sample

Laboratory duplicate samples were analyzed to assess the precision of a particular sample. The laboratory did not duplicate and analyze samples for metals and mercury as part of this SDG.

1.10 ICP Serial Dilution

Serial dilutions were analyzed to assess the potential significant physical or chemical interferences due to sample matrix. A serial dilution was completed for sample SW-SA2-GMCS-5.

Serial dilution performed on metals sample SW-SA2-GMCS-5 was outside evaluation criteria for calcium. The post digestion spike recovery for calcium was outside evaluation criteria. Data requiring qualification due to post digestion spike recoveries are included in the following table.

Sample ID	Parameter	Analyte	Qualification
SW-SA2-GMCS-5	Total metals	Calcium	J

1.11 ICP Interference Check Sample

An Interference Check Sample (ICS) was analyzed to verify the contract laboratory's interelement and background correction factors for analysis of metals by ICP. The laboratory analyzed the ICS at the beginning of the analytical run as specified in USEPA SW-846 Method 6010C. The ICS recoveries for all metals analyzed were within evaluation criteria (80-120%); therefore, no qualification of the ICP data was required. Approximately 10% of the ICS recoveries were recalculated and compared to the raw data; no transcription and calculation errors were noted.

1.12 Sample Result Verification

The metals results were reviewed to confirm that analyte quantitation was derived accurately and no calculation errors were noted. Data summary forms were reviewed and compared to the raw data package. No transcription errors were noted and the correct reporting limits were used.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD and LCS/LCSD data were achieved for this SDG.



Analytical Results Table

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
PDA-2								
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	1,1,1-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	1,1,2,2-Tetrachloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	1,1,2-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	1,1-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	1,1-Dichloroethylene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	1,2-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	1,2-Dichloroethene (total)	2	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	1,2-Dichloropropane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	2-Butanone (MEK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	4-Methyl-2-pentanone (MIBK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Acetone	25	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Benzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Bromodichloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Bromoform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Bromomethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Carbon Disulfide	2	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Carbon Tetrachloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Chlorobenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Chlorodibromomethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Chloroethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Chloroform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Chloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	cis-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	cis-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Dichloromethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Ethylbenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Methyl N-Butyl Ketone	10	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Styrene (Monomer)	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Sulfur dioxide	2200	ug/L	T J N	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Tetrachloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Toluene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	trans-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	trans-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Trichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Vinyl chloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	VOCs	Xylenes, Total	2	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	1,2,4-Trichlorobenzene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	1,2-Dichlorobenzene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	1,3-Dichlorobenzene	9.6	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	1,4-Dichlorobenzene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2,2'-Oxybis(1-Chloropropane) (bis-2-chloroisopropyl ether)	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2,4,5-Trichlorophenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2,4,6-Trichlorophenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2,4-Dichlorophenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2,4-Dimethylphenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2,4-Dinitrophenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2,4-Dinitrotoluene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2,6-Dinitrotoluene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2-Chloronaphthalene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2-Chlorophenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2-Methylnaphthalene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2-Methylphenol (o-Cresol)	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2-Nitroaniline	48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	2-Nitrophenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	3 & 4 Methylphenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	3,3'-Dichlorobenzidine	58	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	3-Nitroaniline	48	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	4,6-Dinitro-2-methylphenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	4-Bromophenyl Phenyl Ether	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	4-Chloro-3-methylphenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	4-Chlorophenyl Phenyl Ether	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	4-Nitrophenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Acenaphthene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Acenaphthylene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Anthracene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Benzo(a)anthracene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Benzo(a)pyrene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Benzo(b)fluoranthene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Benzo(g,h,i)perylene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Benzo(k)fluoranthene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Benzyl Butyl Phthalate	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	bis(2-Chloroethoxy)methane	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	bis(2-Chloroethyl)ether	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	bis(2-Ethylhexyl)phthalate	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Carbazole	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Chrysene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Dibenzo(a,h)anthracene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Dibenzofuran	9.6	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Diethyl Phthalate	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Dimethyl Phthalate	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Di-n-butylphthalate	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Di-n-octylphthalate	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Dinoseb	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Fluoranthene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Fluorene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Hexachlorobenzene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Hexachlorobutadiene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Hexachlorocyclopentadiene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Hexachloroethane	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Indeno(1,2,3-cd)pyrene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Isophorone	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Naphthalene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Nitrobenzene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	N-Nitroso-di-n-propylamine	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	N-Nitrosodiphenylamine	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	P-Chloroaniline	19	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Phenanthrene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Phenol	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	P-Nitroaniline	48	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Pyrene	9.6	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	SVOCs	Sulfur	7.3	ug/L	T J N	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	4,4'-DDD	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	4,4'-DDE	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	4,4'-DDT	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Aldrin	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	alpha-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	alpha-Chlordane	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	beta-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Chlordane	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	delta-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Dieldrin	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Endosulfan I	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Endosulfan II	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Endosulfan Sulfate	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Endrin	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Endrin Aldehyde	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Endrin Ketone	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	gamma-BHC (Lindane)	0.048	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Heptachlor	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Heptachlor Epoxide	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Methoxychlor	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Pesticides	Toxaphene	4.8	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	2,4,5-T	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	2,4,5-TP (Silvex)	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	2,4-D	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	2,4-DB	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	Dalapon	4.8	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	Dicamba	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	Dichlorprop	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	120	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	MCPP	120	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Herbicides	Pentachlorophenol	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Aluminum	2.1	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Aluminum (Dissolved)	0.2	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Antimony	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Antimony (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Arsenic	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Arsenic (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Barium	0.07	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Barium (Dissolved)	0.05	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Beryllium	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Beryllium (Dissolved)	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Cadmium	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Cadmium (Dissolved)	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Calcium	43	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Calcium (Dissolved)	43	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Chromium	0.0032	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Chromium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Cobalt	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Cobalt (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Copper	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Copper (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Iron	2.6	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Iron (Dissolved)	0.027	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Lead	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Lead (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Magnesium	16	mg/L		

See last page of table for notes

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Magnesium (Dissolved)	16	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Manganese	0.17	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Manganese (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Mercury	0.0002	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Nickel	0.0052	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Nickel (Dissolved)	0.04	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Potassium (Dissolved)	2.8	mg/L		
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Selenium	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Selenium (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Silver	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Silver (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Sodium	19	mg/L		J
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		J
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Thallium	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Thallium (Dissolved)	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Vanadium	0.0064	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Vanadium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Zinc	0.013	mg/L	J	
Surface Water	SW-SA2-GMCS-2	5/28/2014	Metals	Zinc (Dissolved)	0.02	mg/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
PDA-3								
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	1,1,1-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	1,1,2,2-Tetrachloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	1,1,2-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	1,1-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	1,1-Dichloroethylene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	1,2-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	1,2-Dichloroethene (total)	2	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	1,2-Dichloropropane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	2-Butanone (MEK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	4-Methyl-2-pentanone (MIBK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Acetone	25	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Benzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Bromodichloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Bromoform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Bromomethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Carbon Disulfide	2	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Carbon Tetrachloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Chlorobenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Chlorodibromomethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Chloroethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Chloroform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Chloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	cis-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	cis-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Dichloromethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Ethylbenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Methyl N-Butyl Ketone	10	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Styrene (Monomer)	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Sulfur dioxide	3800	ug/L	T J N	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Tetrachloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Toluene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	trans-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	trans-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Trichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Vinyl chloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	VOCs	Xylenes, Total	2	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	1,2,4-Trichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	1,2-Dichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	1,3-Dichlorobenzene	9.7	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	1,4-Dichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2,2'-Oxybis(1-Chloropropane) (bis-2-chloroisopropyl ether)	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2,4,5-Trichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2,4,6-Trichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2,4-Dichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2,4-Dimethylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2,4-Dinitrophenol	49	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2,4-Dinitrotoluene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2,6-Dinitrotoluene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2-Chloronaphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2-Chlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2-Methylnaphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2-Methylphenol (o-Cresol)	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2-Nitroaniline	49	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	2-Nitrophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	3 & 4 Methylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	3,3'-Dichlorobenzidine	58	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	3-Nitroaniline	49	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	4,6-Dinitro-2-methylphenol	49	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	4-Bromophenyl Phenyl Ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	4-Chloro-3-methylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	4-Chlorophenyl Phenyl Ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	4-Nitrophenol	49	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Acenaphthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Acenaphthylene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Anthracene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Benzo(a)anthracene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Benzo(a)pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Benzo(b)fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Benzo(g,h,i)perylene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Benzo(k)fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Benzyl Butyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	bis(2-Chloroethoxy)methane	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	bis(2-Chloroethyl)ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	bis(2-Ethylhexyl)phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Carbazole	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Chrysene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Dibenzo(a,h)anthracene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Dibenzofuran	9.7	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Diethyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Dimethyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Di-n-butylphthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Di-n-octylphthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Dinoseb	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Fluorene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Hexachlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Hexachlorobutadiene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Hexachlorocyclopentadiene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Hexachloroethane	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Indeno(1,2,3-cd)pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Isophorone	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Naphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Nitrobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	N-Nitroso-di-n-propylamine	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	N-Nitrosodiphenylamine	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	P-Chloroaniline	19	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Phenanthrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Phenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	P-Nitroaniline	49	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	SVOCs	Sulfur	6.8	ug/L	T J N	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	4,4'-DDD	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	4,4'-DDE	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	4,4'-DDT	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Aldrin	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	alpha-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	alpha-Chlordane	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	beta-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Chlordane	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	delta-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Dieldrin	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Endosulfan I	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Endosulfan II	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Endosulfan Sulfate	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Endrin	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Endrin Aldehyde	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Endrin Ketone	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	gamma-BHC (Lindane)	0.048	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Heptachlor	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Heptachlor Epoxide	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Methoxychlor	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Pesticides	Toxaphene	4.8	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	2,4,5-T	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	2,4,5-TP (Silvex)	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	2,4-D	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	2,4-DB	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	Dalapon	4.8	ug/L	U	UJ
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	Dicamba	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	Dichlorprop	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	110	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	MCPP	110	ug/L	U	UJ
Surface Water	SW-SA2-GMCS-3	5/28/2014	Herbicides	Pentachlorophenol	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Aluminum	2.2	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Aluminum (Dissolved)	0.2	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Antimony	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Antimony (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Arsenic	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Arsenic (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Barium	0.074	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Barium (Dissolved)	0.05	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Beryllium	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Beryllium (Dissolved)	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Cadmium	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Cadmium (Dissolved)	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Calcium	45	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Calcium (Dissolved)	43	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Chromium	0.0032	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Chromium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Cobalt	0.0011	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Cobalt (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Copper	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Copper (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Iron	2.7	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Iron (Dissolved)	0.05	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Lead	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Lead (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Magnesium	17	mg/L		

See last page of table for notes

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Magnesium (Dissolved)	16	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Manganese	0.18	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Manganese (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Mercury	0.0002	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Nickel	0.0053	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Nickel (Dissolved)	0.04	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Potassium	3.4	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Potassium (Dissolved)	2.9	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Selenium	0.0076	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Selenium (Dissolved)	0.0067	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Silver	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Silver (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Sodium	20	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Thallium	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Thallium (Dissolved)	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Vanadium	0.0066	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Vanadium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Zinc	0.013	mg/L	J	
Surface Water	SW-SA2-GMCS-3	5/28/2014	Metals	Zinc (Dissolved)	0.02	mg/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
PDA-4								
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	1,1,1-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	1,1,2,2-Tetrachloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	1,1,2-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	1,1-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	1,1-Dichloroethylene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	1,2-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	1,2-Dichloroethene (total)	2	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	1,2-Dichloropropane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	2-Butanone (MEK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	4-Methyl-2-pentanone (MIBK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Acetone	25	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Benzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Bromodichloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Bromoform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Bromomethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Carbon Disulfide	2	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Carbon Tetrachloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Chlorobenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Chlorodibromomethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Chloroethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Chloroform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Chloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	cis-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	cis-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Dichloromethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Ethylbenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Methyl N-Butyl Ketone	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Styrene (Monomer)	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Sulfur dioxide	3100	ug/L	T J N	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Tetrachloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Toluene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	trans-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	trans-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Trichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Vinyl chloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	VOCs	Xylenes, Total	2	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	1,2,4-Trichlorobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	1,2-Dichlorobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	1,3-Dichlorobenzene	10	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	1,4-Dichlorobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2,2'-Oxybis(1-Chloropropane) (bis-2-chloroisopropyl ether)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2,4,5-Trichlorophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2,4,6-Trichlorophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2,4-Dichlorophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2,4-Dimethylphenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2,4-Dinitrophenol	50	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2,4-Dinitrotoluene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2,6-Dinitrotoluene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2-Chloronaphthalene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2-Chlorophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2-Fluoro-4-nitrophenol	4.8	ug/L	T J N	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2-Methylnaphthalene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2-Methylphenol (o-Cresol)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2-Nitroaniline	50	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	2-Nitrophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	3 & 4 Methylphenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	3,3'-Dichlorobenzidine	60	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	3-Nitroaniline	50	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	4,6-Dinitro-2-methylphenol	50	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	4-Bromophenyl Phenyl Ether	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	4-Chloro-3-methylphenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	4-Chlorophenyl Phenyl Ether	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	4-Nitrophenol	50	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Acenaphthene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Acenaphthylene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Anthracene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Benzo(a)anthracene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Benzo(a)pyrene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Benzo(b)fluoranthene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Benzo(g,h,i)perylene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Benzo(k)fluoranthene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Benzyl Butyl Phthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	bis(2-Chloroethoxy)methane	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	bis(2-Chloroethyl)ether	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	bis(2-Ethylhexyl)phthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Carbazole	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Chrysene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Dibenzo(a,h)anthracene	10	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Dibenzofuran	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Diethyl Phthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Dimethyl Phthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Di-n-butylphthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Di-n-octylphthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Dinoseb	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Fluoranthene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Fluorene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Hexachlorobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Hexachlorobutadiene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Hexachlorocyclopentadiene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Hexachloroethane	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Indeno(1,2,3-cd)pyrene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Isophorone	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Naphthalene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Nitrobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	N-Nitroso-di-n-propylamine	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	N-Nitrosodiphenylamine	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	P-Chloroaniline	20	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Phenanthrene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Phenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	P-Nitroaniline	50	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Pyrene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Unknown	5.7	ug/L	T J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Unknown	6.2	ug/L	T J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	SVOCs	Unknown	4.5	ug/L	T J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	4,4'-DDD	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	4,4'-DDE	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	4,4'-DDT	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Aldrin	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	alpha-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	alpha-Chlordane	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	beta-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Chlordane	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	delta-BHC	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Dieldrin	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Endosulfan I	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Endosulfan II	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Endosulfan Sulfate	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Endrin	0.048	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Endrin Aldehyde	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Endrin Ketone	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	gamma-BHC (Lindane)	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Heptachlor	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Heptachlor Epoxide	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Methoxychlor	0.048	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Pesticides	Toxaphene	4.8	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	2,4,5-T	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	2,4,5-TP (Silvex)	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	2,4-D	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	2,4-DB	0.48	ug/L	U	UJ
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	Dalapon	4.8	ug/L	U	UJ
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	Dicamba	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	Dichlorprop	0.48	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	120	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	MCPP	120	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Herbicides	Pentachlorophenol	0.24	ug/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Aluminum	2.4	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Aluminum (Dissolved)	0.2	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Antimony	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Antimony (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Arsenic	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Arsenic (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Barium	0.073	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Barium (Dissolved)	0.051	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Beryllium	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Beryllium (Dissolved)	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Cadmium	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Cadmium (Dissolved)	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Calcium	43	mg/L		J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Calcium (Dissolved)	44	mg/L		J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Chromium	0.0034	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Chromium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Cobalt	0.0013	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Cobalt (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Copper	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Copper (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Iron	3	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Iron (Dissolved)	0.028	mg/L	J	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Lead	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Lead (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Magnesium (Dissolved)	16	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Manganese	0.18	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Manganese (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Mercury	0.0002	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Nickel	0.0058	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Nickel (Dissolved)	0.04	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Potassium (Dissolved)	3	mg/L		
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Selenium	0.02	mg/L	U	UJ
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Selenium (Dissolved)	0.007	mg/L	J	J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Silver	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Silver (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Sodium	19	mg/L		J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		J
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Thallium	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Thallium (Dissolved)	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Vanadium	0.0068	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Vanadium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Zinc	0.013	mg/L	J	
Surface Water	SW-SA2-GMCS-4	5/28/2014	Metals	Zinc (Dissolved)	0.02	mg/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
PDA-5								
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	1,1,1-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	1,1,2,2-Tetrachloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	1,1,2-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	1,1-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	1,1-Dichloroethylene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	1,2-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	1,2-Dichloroethene (total)	2	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	1,2-Dichloropropane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	2-Butanone (MEK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	4-Methyl-2-pentanone (MIBK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Acetone	25	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Benzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Bromodichloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Bromoform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Bromomethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Carbon Disulfide	2	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Carbon Tetrachloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Chlorobenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Chlorodibromomethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Chloroethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Chloroform	0.16	ug/L	J	U
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Chloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	cis-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	cis-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Dichloromethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Ethylbenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Methyl N-Butyl Ketone	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Styrene (Monomer)	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Sulfur dioxide	720	ug/L	T J N	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Tetrachloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Toluene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	trans-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	trans-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Trichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Vinyl chloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	VOCs	Xylenes, Total	2	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	1,2,4-Trichlorobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	1,2-Dichlorobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	1,3-Dichlorobenzene	10	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	1,4-Dichlorobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2,2'-Oxybis(1-Chloropropane) (bis-2-chloroisopropyl ether)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2,4,5-Trichlorophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2,4,6-Trichlorophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2,4-Dichlorophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2,4-Dimethylphenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2,4-Dinitrophenol	51	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2,4-Dinitrotoluene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2,6-Dinitrotoluene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2-Chloronaphthalene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2-Chlorophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2-Methylnaphthalene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2-Methylphenol (o-Cresol)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2-Nitroaniline	51	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	2-Nitrophenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	3 & 4 Methylphenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	3,3'-Dichlorobenzidine	62	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	3-Nitroaniline	51	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	4,6-Dinitro-2-methylphenol	51	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	4-Bromophenyl Phenyl Ether	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	4-Chloro-3-methylphenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	4-Chlorophenyl Phenyl Ether	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	4-Nitrophenol	51	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Acenaphthene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Acenaphthylene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Anthracene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Benzo(a)anthracene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Benzo(a)pyrene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Benzo(b)fluoranthene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Benzo(g,h,i)perylene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Benzo(k)fluoranthene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Benzyl Butyl Phthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	bis(2-Chloroethoxy)methane	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	bis(2-Chloroethyl)ether	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	bis(2-Ethylhexyl)phthalate	3.6	ug/L	J B	U
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Carbazole	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Chrysene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Dibenzo(a,h)anthracene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Dibenzofuran	10	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Diethyl Phthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Dimethyl Phthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Di-n-butylphthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Di-n-octylphthalate	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Dinoseb	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Fluoranthene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Fluorene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Hexachlorobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Hexachlorobutadiene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Hexachlorocyclopentadiene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Hexachloroethane	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Indeno(1,2,3-cd)pyrene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Isophorone	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Naphthalene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Nitrobenzene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	N-Nitroso-di-n-propylamine	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	N-Nitrosodiphenylamine	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	P-Chloroaniline	21	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Phenanthrene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Phenol	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Phenylmercaptan	NC	ug/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	P-Nitroaniline	51	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	p-Quinone	NC	ug/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Pyrene	10	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	SVOCs	Sulfur	4.9	ug/L	T J N	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	4,4'-DDD	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	4,4'-DDE	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	4,4'-DDT	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Aldrin	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	alpha-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	alpha-Chlordane	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	beta-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Chlordane	0.49	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	delta-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Dieldrin	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Endosulfan I	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Endosulfan II	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Endosulfan Sulfate	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Endrin	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Endrin Aldehyde	0.049	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Endrin Ketone	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	gamma-BHC (Lindane)	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Heptachlor	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Heptachlor Epoxide	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Methoxychlor	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Pesticides	Toxaphene	4.9	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	2,4,5-T	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	2,4,5-TP (Silvex)	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	2,4-D	0.49	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	2,4-DB	0.49	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	Dalapon	4.9	ug/L	U	UJ
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	Dicamba	0.49	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	Dichlorprop	0.49	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	120	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	MCPP	120	ug/L	U	UJ
Surface Water	SW-SA2-GMCS-5	5/28/2014	Herbicides	Pentachlorophenol	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Aluminum	2.3	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Aluminum (Dissolved)	0.2	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Antimony	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Antimony (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Arsenic	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Arsenic (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Barium	0.072	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Barium (Dissolved)	0.048	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Beryllium	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Beryllium (Dissolved)	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Cadmium	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Cadmium (Dissolved)	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Calcium	43	mg/L		J
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Calcium (Dissolved)	41	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Chromium	0.0033	mg/L	J	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Chromium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Cobalt	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Cobalt (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Copper	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Copper (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Iron	2.7	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Iron (Dissolved)	0.05	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Lead	0.01	mg/L	U	

See last page of table for notes

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Lead (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Magnesium (Dissolved)	15	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Manganese	0.17	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Manganese (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Mercury	0.0002	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Nickel	0.0053	mg/L	J	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Nickel (Dissolved)	0.04	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Potassium (Dissolved)	2.7	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Selenium	0.02	mg/L	U	UJ
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Selenium (Dissolved)	0.0065	mg/L	J	J
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Silver	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Silver (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Sodium	20	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Thallium	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Thallium (Dissolved)	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Vanadium	0.0066	mg/L	J	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Vanadium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Zinc	0.012	mg/L	J	
Surface Water	SW-SA2-GMCS-5	5/28/2014	Metals	Zinc (Dissolved)	0.02	mg/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
PDA-9								
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	1,1,1-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	1,1,2,2-Tetrachloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	1,1,2-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	1,1-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	1,1-Dichloroethylene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	1,2-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	1,2-Dichloroethene (total)	2	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	1,2-Dichloropropane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	2-Butanone (MEK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	4-Methyl-2-pentanone (MIBK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Acetone	25	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Benzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Bromodichloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Bromoform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Bromomethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Carbon Disulfide	2	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Carbon Tetrachloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Chlorobenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Chlorodibromomethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Chloroethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Chloroform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Chloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	cis-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	cis-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Dichloromethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Ethylbenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Methyl N-Butyl Ketone	10	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Styrene (Monomer)	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Sulfur dioxide	3200	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Tetrachloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Toluene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	trans-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	trans-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Trichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Vinyl chloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	VOCs	Xylenes, Total	2	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	1,2,4-Trichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	1,2-Dichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	1,3-Dichlorobenzene	9.7	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	1,4-Dichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2,2'-Oxybis(1-Chloropropane) (bis-2-chloroisopropyl ether)	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2,4,5-Trichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2,4,6-Trichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2,4-Dichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2,4-Dimethylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2,4-Dinitrophenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2,4-Dinitrotoluene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2,6-Dinitrotoluene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2-Chloronaphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2-Chlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2-Methylnaphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2-Methylphenol (o-Cresol)	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2-Nitroaniline	48	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	2-Nitrophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	3 & 4 Methylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	3,3'-Dichlorobenzidine	58	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	3-Hexanol, 4-methyl-	5.8	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	3-Nitroaniline	48	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	4,6-Dinitro-2-methylphenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	4-Bromophenyl Phenyl Ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	4-Chloro-3-methylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	4-Chlorophenyl Phenyl Ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	4-Nitrophenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Acenaphthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Acenaphthylene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Anthracene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Benzo(a)anthracene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Benzo(a)pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Benzo(b)fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Benzo(g,h,i)perylene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Benzo(k)fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Benzyl Butyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	bis(2-Chloroethoxy)methane	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	bis(2-Chloroethyl)ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	bis(2-Ethylhexyl)phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Carbazole	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Chrysene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Dibenzo(a,h)anthracene	9.7	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Dibenzofuran	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Diethyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Dimethyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Di-n-butylphthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Di-n-octylphthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Dinoseb	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Fluorene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Hexachlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Hexachlorobutadiene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Hexachlorocyclopentadiene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Hexachloroethane	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Indeno(1,2,3-cd)pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Isophorone	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Naphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Nitrobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	N-Nitroso-di-n-propylamine	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	N-Nitrosodiphenylamine	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	P-Chloroaniline	19	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Phenanthrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Phenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Phenol, 2-fluoro-4-nitro-, acetate(ester	4.1	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	P-Nitroaniline	48	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Sulfur	13	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Unknown	6	ug/L	T J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Unknown	5.4	ug/L	T J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Unknown	9.2	ug/L	T J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	SVOCs	Unknown	6.5	ug/L	T J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	4,4'-DDD	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	4,4'-DDE	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	4,4'-DDT	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Aldrin	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	alpha-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	alpha-Chlordane	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	beta-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Chlordane	0.49	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	delta-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Dieldrin	0.049	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Endosulfan I	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Endosulfan II	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Endosulfan Sulfate	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Endrin	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Endrin Aldehyde	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Endrin Ketone	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	gamma-BHC (Lindane)	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Heptachlor	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Heptachlor Epoxide	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Methoxychlor	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Pesticides	Toxaphene	4.9	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	2,4,5-T	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	2,4,5-TP (Silvex)	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	2,4-D	0.51	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	2,4-DB	0.51	ug/L	U	UJ
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	Dalapon	5.1	ug/L	U	UJ
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	Dicamba	0.51	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	Dichlorprop	0.51	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	120	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	MCPP	120	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Herbicides	Pentachlorophenol	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Aluminum	2.3	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Aluminum (Dissolved)	0.2	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Antimony	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Antimony (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Arsenic	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Arsenic (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Barium	0.072	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Barium (Dissolved)	0.05	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Beryllium	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Beryllium (Dissolved)	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Cadmium	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Cadmium (Dissolved)	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Calcium	43	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Calcium (Dissolved)	43	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Chromium	0.0035	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Chromium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Cobalt	0.0012	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Cobalt (Dissolved)	0.01	mg/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Copper	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Copper (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Iron	2.8	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Iron (Dissolved)	0.05	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Lead	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Lead (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Magnesium (Dissolved)	16	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Manganese	0.17	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Manganese (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Mercury	0.0002	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Nickel	0.007	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Nickel (Dissolved)	0.04	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Potassium (Dissolved)	2.9	mg/L		
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Selenium	0.02	mg/L	U	UJ
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Selenium (Dissolved)	0.008	mg/L	J	J
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Silver	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Silver (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Sodium	19	mg/L		J
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Sodium (Dissolved)	21	mg/L		J
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Thallium	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Thallium (Dissolved)	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Vanadium	0.0065	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Vanadium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Zinc	0.013	mg/L	J	
Surface Water	SW-SA2-GMCS-9	5/28/2014	Metals	Zinc (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	1,1,1-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	1,1,2,2-Tetrachloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	1,1,2-Trichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	1,1-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	1,1-Dichloroethylene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	1,2-Dichloroethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	1,2-Dichloroethene (total)	2	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	1,2-Dichloropropane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	2-Butanone (MEK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	4-Methyl-2-pentanone (MIBK)	10	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Acetone	25	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Benzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Bromodichloromethane	1	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Bromoform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Bromomethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Carbon Disulfide	2	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Carbon Tetrachloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Chlorobenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Chlorodibromomethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Chloroethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Chloroform	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Chloromethane	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	cis-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	cis-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Dichloromethane	5	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Ethylbenzene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Methyl N-Butyl Ketone	10	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Styrene (Monomer)	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Tetrachloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Toluene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	trans-1,2-Dichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	trans-1,3-Dichloropropene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Trichloroethene	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Vinyl chloride	1	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	VOCs	Xylenes, Total	2	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	1,2,4-Trichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	1,2-Dichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	1,3-Dichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	1,4-Dichlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2,2'-Oxybis(1-Chloropropane) (bis-2-chloroisopropyl ether)	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2,4,5-Trichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2,4,6-Trichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2,4-Dichlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2,4-Dimethylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2,4-Dinitrophenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2,4-Dinitrotoluene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2,6-Dinitrotoluene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2-Chloronaphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2-Chlorophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2-Fluoro-4-nitrophenol	4.1	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2-Methylnaphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2-Methylphenol (o-Cresol)	9.7	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2-Nitroaniline	48	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	2-Nitrophenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	3 & 4 Methylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	3,3'-Dichlorobenzidine	58	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	3-Nitroaniline	48	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	4,6-Dinitro-2-methylphenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	4-Bromophenyl Phenyl Ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	4-Chloro-3-methylphenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	4-Chlorophenyl Phenyl Ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	4-Nitrophenol	48	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Acenaphthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Acenaphthylene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Aldol condensation product	7.3	ug/L	T A J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Anthracene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Benzo(a)anthracene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Benzo(a)pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Benzo(b)fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Benzo(g,h,i)perylene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Benzo(k)fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Benzyl Butyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	bis(2-Chloroethoxy)methane	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	bis(2-Chloroethyl)ether	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	bis(2-Ethylhexyl)phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Carbazole	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Chrysene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Dibenzo(a,h)anthracene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Dibenzofuran	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Diethyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Dimethyl Phthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Di-n-butylphthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Di-n-octylphthalate	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Dinoseb	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Fluoranthene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Fluorene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Hexachlorobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Hexachlorobutadiene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Hexachlorocyclopentadiene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Hexachloroethane	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Indeno(1,2,3-cd)pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Isophorone	9.7	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Naphthalene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Nitrobenzene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	N-Nitroso-di-n-propylamine	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	N-Nitrosodiphenylamine	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	P-Chloroaniline	19	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Phenanthrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Phenol	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Phosgene oxime	5.3	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	P-Nitroaniline	48	ug/L	U *	UJ
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Pyrene	9.7	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Sulfur	26	ug/L	T J N	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Unknown	6.9	ug/L	T J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	SVOCs	Unknown	4.9	ug/L	T J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	4,4'-DDD	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	4,4'-DDE	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	4,4'-DDT	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Aldrin	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	alpha-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	alpha-Chlordane	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	beta-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Chlordane	0.49	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	delta-BHC	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Dieldrin	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Endosulfan I	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Endosulfan II	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Endosulfan Sulfate	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Endrin	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Endrin Aldehyde	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Endrin Ketone	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	gamma-BHC (Lindane)	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Heptachlor	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Heptachlor Epoxide	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Methoxychlor	0.049	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Pesticides	Toxaphene	4.9	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	2,4,5-T	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	2,4,5-TP (Silvex)	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	2,4-D	0.5	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	2,4-DB	0.5	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	Dalapon	5	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	Dicamba	0.5	ug/L	U	

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	Dichlorprop	0.5	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	MCPA (2-Methyl-4-Chlorophenoxyacetic Acid)	120	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	MCPP	120	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Herbicides	Pentachlorophenol	0.25	ug/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Aluminum	2.3	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Aluminum (Dissolved)	0.2	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Antimony	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Antimony (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Arsenic	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Arsenic (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Barium	0.07	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Barium (Dissolved)	0.047	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Beryllium	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Beryllium (Dissolved)	0.004	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Cadmium	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Cadmium (Dissolved)	0.005	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Calcium	42	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Calcium (Dissolved)	41	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Chromium	0.0033	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Chromium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Cobalt	0.0016	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Cobalt (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Copper	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Copper (Dissolved)	0.02	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Iron	2.8	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Iron (Dissolved)	0.027	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Lead	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Lead (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Magnesium	16	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Magnesium (Dissolved)	15	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Manganese	0.17	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Manganese (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Mercury	0.0002	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Nickel	0.0059	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Nickel (Dissolved)	0.04	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Potassium	3.2	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Potassium (Dissolved)	2.7	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Selenium	0.02	mg/L	U	UJ
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Selenium (Dissolved)	0.0064	mg/L	J	J

Sauget Area 2
Groundwater Migration Control System
Surface Water Sample Analytical Results
May 2014

Media	Sample ID	Sample Date	Group	Chemical	Result	Units	Lab Qualifiers	URS Qualifiers
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Silver	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Silver (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Sodium	20	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Sodium (Dissolved)	20	mg/L		
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Thallium	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Thallium (Dissolved)	0.025	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Vanadium	0.0068	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Vanadium (Dissolved)	0.01	mg/L	U	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Zinc	0.014	mg/L	J	
Surface Water	SW-SA2-GMCS-9-Dup	5/28/2014	Metals	Zinc (Dissolved)	0.02	mg/L	U	

Notes:

NC - Not Calculated

Lab Qualifier Definition

- A The tentatively identified compound is a suspected aldol-condensation product
- B Compound was found in the blank and sample
- J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
- N Flag indicates the presumptive evidence of a compound
- T Result is a tentatively identified compound (TIC) and an estimated value
- U Indicates the analyte was analyzed for but not detected

URS Qualifier Definition

- J Analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- U Indicates the analyte was analyzed for but not detected